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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/705,759	11/06/2000	Min-Kyu Hwang	3449-0137P	7993

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EXAMINER

PHAN, THANH S

ART UNIT

PAPER NUMBER

2841

DATE MAILED: 04/10/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/705,759

Applicant(s)

HWANG ET AL.

Examiner

Thanh S Phan

Art Unit

2841

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marro [5,901,044] in view of Ward et al.[5,691,885].

Regarding claims 1 and 4, Marro discloses a system module [figure 1] for an electric/electronic appliance, comprising: a case constituting a body of the one system module; power pins and signal pins electrically connected to a board [12] located inside the case. Marro does not disclose the power pins and signal pins are disposed adjacent to three edges on a surface of the case in a manner such that substantially a U-shaped arrangement is obtained, and different boards are used for the power and signal pins.

Ward et al. discloses a module with connectors [pins] are disposed in a substantially U-shaped [figure 11]. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate Marro with Ward et al.'s teaching to increase efficiency in module connections.

Boucheron discloses a plurality of boards are used in a module [figure 6]. It would have been obvious to modify Marro with Boucheron's boards for specified characteristic of intended use of each board.

Regarding claim 3. Marro, Boucheron and Ward et al. disclose the claimed invention of claim, Boucheron further discloses wherein connecting pins and inserting holes, through which the connecting pins are inserted, are formed in the power and signal board, respectively, so as to electrically connect the power board and the signal board with each other [figure6].

Regarding claim 5. Marro, Boucheron and Ward et al. disclose the claimed invention; Boucheron further discloses wherein the pins are for connecting to a appliance [figure 5].

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Marro and Ward et al. as applied to claim1 above, and further in view of Cooper et al. [5,375,040].

Regarding claim 2, Marro and Ward et al. disclose the one system module as claimed in claim 1 except for wherein at least two corner portions among four corner portions of the case, which two corner portions are opposite to each other in a diagonal direction, are defined with engaging holes, respectively, through which the case and a heat sink are coupled with each other. Cooper discloses a case for a modular electronic circuit wherein at least two corner portions among four corner portions of the case, which two corner portions are opposite to each other in a diagonal direction, are defined with

engaging holes (reference 14), respectively, through which the case and a heat sink (reference 70) are coupled with each other. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Marro and Ward et al. with Cooper's case for quicker dissipation of heat generated by the circuit boards.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nakamura (U.S Pat # 6,224,379) discloses a Branching Connector and Electrical Connector Box Assembly.

Onizuka (U.S Pat # 5,877,944) discloses an Electric Connector Box For Housing Wire Harness.

Gladd et al. (U.S Pat # 6,000,952) discloses an Interconnect System For Intergrating a Bussed Electrical Distribution Center With a Printed Circuit Board.

Daoud et al. (U.S Pat # 6,203,334) discloses a Modular Jack Receptacle Including a Removable Interface.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh S Phan whose telephone number is 703-305-0069. The examiner can normally be reached on M-F 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David S Martin can be reached on 703-308-3121. The fax phone numbers

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for the organization where this application or proceeding is assigned are 703-305-7722 for regular communications and 703-305-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

TSP
April 8, 2002

A handwritten signature in black ink, appearing to read 'D. S. Martin', with a stylized, overlapping flourish at the end.

**DAVID S. MARTIN
PRIMARY EXAMINER
GROUP 2100**